



Machine & Electrical
CONSULTANTS, INC.

EXHIBIT B

January 3, 2003

Dynamic Machine Works

Subject: Johnford HT-275G Heavy Duty Turning Center

Description

The Johnford HT-275G is a heavy duty, high precision CNC turning center cast from Meehanite iron. Full advantage of the 60HP spindle motor and 4 speed gear box is taken by the massive 45 degree slant bed design. Built in classic style, the 45 degree slant bed is a torque tube design. The torque tube, or hole cast through the center of the slant bed, provides an extremely rigid bed and excellent heat dissipation. To allow for the large swing and larger capacities, the saddle casting is inclined to 60 degrees. The square box ways provide the rigidity for heavy duty turning. Hand scraped Turcite - B applied to all mating sliding surfaces ensures high rapid traverse rates and accurate positioning. The coolant tank is separate from the machine base to prevent heat transfer from the coolant to the machine casting which ensures precision and promotes easy clean out and maintenance. To further ensure accuracy and precision, the ballscrews are double nut type and pretensioned to eliminate thermal growth.

The precision spindle structure is mounted using precision Timken double row roller bearings for high rigidity. The spindle quill inner and outer linings are precision ground for fit with the spindle, thus ensuring extreme concentricity and accuracy. The spindle is driven by a 60HP high torque motor through a four speed gear box.

A massive 12 station bi-directional turret. The turret has a 17" diameter curvic coupling for heavy turning. The turret face is a full 12" thick for maximum rigidity with large and long boring bars.

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Machine Specifications

Capacities:

Swing over bed/Front cover	29.52"
Standard turning diameter	23.62"
Swing over carriage	23.62"
Maximum cross travel (X axis)	13.38"
Maximum longitudinal travel (Z axis)	275"
Distance between centers	275"

Spindle:

Spindle Motor	60 HP
Spindle nose	A2-20
Spindle RPM	0-500
Hole through spindle	12.5"
Bar Capacity	12.5"
Spindle bearing diameter (I.D.)	15.35"
Spindle inside taper	M.T. 7
Standard chuck	24"

Turret:(with tool holding surface on turret housing, full 12")

Turret tool positions	12
Turret type	Hydraulic
Tool mounting	Block type
O.D. tool shank size	1.00"
I.D. tool shank size	4.0", 5" if available, split type
Index time	1.5 seconds

Tailstock (Rotary Type / built-in live center):

Quill diameter of tailstock	9.84"
Quill stroke of tailstock	7.87"
Quill taper of tailstock	M.T. 7
Tailstock body travel (driven by ballscrew)	240"

Ballscrews and axis motors:

Z axis ballscrew diameter	80mm (3.15") x 10 pitch
X axis ballscrew diameter	63mm (2.48") x 12 pitch
Ballscrew type	Class 3 double nut pre-loaded, rotating nut
Ballscrew mounting type	Pre-tensioned
X-Z servo motor HP	X 5.0 HP, Z 6.0 HP



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Machine Specifications Continued....

Feeds:

Rapid Traverse Rate X,Z
Cutting feed rate
Positioning accuracy
Repeatability

472, 472 IPM
0.01 - 315 IPM
+/- .0005" full stroke
+/- .0002"

General:

Coolant tank capacity
Coolant pump motor
Machine Weight
Floor Space
Machine Power Source
Hydraulic pump motor

150 gallons
1.7HP
98,500 LBS
450" X 138" x 156"
208/220 Volts, 3 Phase 250 Amps
7.5HP

Standard Machine Accessories

Complete coolant system
Splash guards
Built-in work light
Workpiece counter
1 set of Instruction manuals
Chip conveyor with chip cart
3 color operation light
Spindle orientation
Hydraulic, programmable tailstock body and quill
Hydraulic counterbalance for turret assembly
Rotary Tailstock / built-in live center

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Standard Control Specifications - Fanuc 18TC Control

8.4" color LCD screen
Color graphics
Manual Guidance conversational programming
AC digital servo and spindle systems
Full MDI keyboard
Program input/output or DNC operation from PCMCIA card (up to 16MB storage)
256K (640 Meters) part program RAM storage
200 registerable programs
2 axes simultaneous control
Constant surface speed
X axis radius/diameter programming
Decimal point input
Manual feedrate override (0-150%)
Optional block skip
Auto acceleration/deceleration
Canned cycles
Multiple repetitive cycles
Multiple repetitive cycles II
Canned cycles for drilling
Threading, synchronous
Multiple threading
Threading retract
Continuous threading
Variable lead threading
Custom Macro B
High speed skip signal
Unexpected Disturbance torque detection
Programmable data input (G10)
Direct drawing dimension programming
Work piece coordinate system (G52 - G59)
Tool geometry/wear offsets 32 pairs
Tool nose radius compensation (G40-G42)
Tool life management
Automatic tool offset
Direct input of tool offset value measured
Backlash compensation
Spindle speed override (0-120%)
Machine lock
M,S,T function lock
Dry Run

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Fanuc 18TC Control Specifications Continued....

Single block
Rapid Traverse Override
Spindle orientation
Rigid tapping
Clock function
Alarm history display
Operation history display
Run, hour and parts count display
RS232-C
Program restart
Background editing

Pricing

HT-275G Fanuc 18TC..... \$355,000.00

Optional Equipment

15GPM@100PSI Positive Pressurse Pump..... included
440/460/480 Volt operation..... \$1,750.00
Provision for rear mounted manual or air type chuck..... \$included



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Delivery

At present, delivery is 20-24 weeks after receipt of a formal purchase order and down payment. A firm delivery schedule will be given at the time of order placement.

Training and Installation

5 total days of on-site operator, maintenance, and programming instruction are included in the purchase price. Additional instruction is available on-site on a charge basis. Installation of the machine is also included in the purchase price providing that all items included in our pre-installation check list have been correctly carried out by the customer.

F.O.B.

Dynamic Machine Works floor.

Terms

10 percent down payment is required with formal purchase order, 40 percent is due upon delivery and prior to installation and the balance is due 21 days from date of commissioning.

Security Agreement / Terms and Conditions

Buyer shall execute seller's Sales Contract and any other documents required by seller. Seller shall retain a security interest in the goods until full payment is made. Seller's Terms and Conditions of sale are attached to the back of the Sales Contract.

Warranty

MECI warrants products it sells to be free from defects in parts and workmanship for 12 months, from date of commissioning. All parts provided under this warranty are F.O.B. Lorain, Ohio, unless otherwise specified. Defective warranty parts are to be returned to MECI, freight prepaid. Perishable items such as belts and light bulbs and the replacement thereof are not covered by warranty. The CNC control system is warranted by the manufacturer for 24 months. The control manufacturer provides this warranty directly to the end user. Upon notification to our service department of a problem, MECI will respond within 24 hours (same day, if possible) to your service request.

Specifications are subject to change without prior notice. Typographical or clerical errors within this quotation are subject to correction.

We thank you for this opportunity to quote, and pledge to provide the best service possible, should we be favored with an order.

Sincerely,
Norman Crepeau

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